

and horses to level up the ground where the tornado had disturbed it.

Mr. Wait made a trip from Greensburg eastward along the path which the tornado traveled, for the purpose of obtaining, if possible, photographs of some of the torn-up ground. But the trip was made 18 months after the occurrence of the tornado and the land includ-

ing the Cobb pasture, had all been twice sown in wheat and only a few faint traces could be found.

Mr. Keller is a man apparently between 35 and 40 years of age. His reputation for truthfulness and sobriety is of the best. Apparently he is entirely capable of making careful and reliable observations.

## TORNADO AT GRAND RAPIDS, MICH., MAY 2, 1930

By WILLIAM H. TRACY

[Weather Bureau Office, Grand Rapids, Mich.]

The most destructive local windstorm of which there is any record struck this city during the early morning of May 2. Storm was of true tornado or "twister" type and was apparently one of a series of similar storms that occurred in southern Michigan during the night of May 1-2.

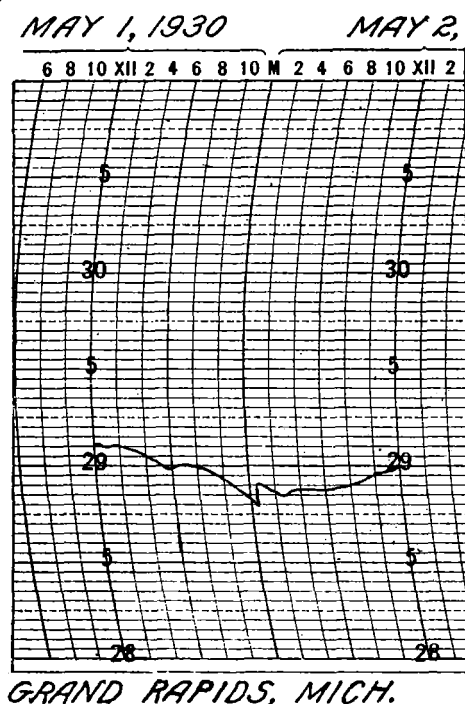


FIGURE 1.—Barograph trace during passage of the tornado

The maximum force of the storm struck this city at 12:32 a. m., central standard time, when the Weather Bureau anemometer on the roof of the Grand Rapids National Bank Building registered an extreme velocity of 72 miles an hour from southwest. Anemometer is located  $1\frac{1}{4}$  miles from the nearest point in the storm's path. Pressure had been falling steadily since noon of May 1, due to a storm center of considerable magnitude over northern Manitoba; during the passage of the storm there was an abrupt rise of 0.12 of an inch. (See Fig. 1). Wind was from south-southwest prior to the storm and veered to west-northwest after its passage. Heavy rain began at 12:29 a. m., and 0.23 of an inch fell in 9 minutes; rain continued, but at a slow rate; hail accompanied the rain from 12:32 a. m. to 12:37 a. m.; hailstones were about one-quarter inch in diameter and caused no damage. Thunderstorms and high temperatures for the season were

general throughout the middle and upper Mississippi valleys during the afternoon and night of May 1.

The first point where material damage occurred is in the southwest portion of the city about one-half mile from the eastern bank of the Grand River. The storm followed a course that was somewhat southeast of northeast, passing from the factory district through part of the best residential section, and the last indication of tornadic action was in the Hodenpyle woods, near the northern shore of Reeds Lake; the path was approximately 4 miles long and its width about 350 feet.

Due to darkness no "funnel" cloud or other peculiar cloud formation or glow was observed, although progress of the storm was carefully noted by observer on duty at this office. That this storm was a true tornado is indicated by the fact that destruction was not uniform along the path, but showed several points of maximum damage; the roar or rumble that is typical of tornadoes was reported by several parties, and was distinctly heard by the undersigned, who resides about 750 feet from the path. Felled trees along the path were lying with their roots to the southwest and their tops to the northeast on the north side, and with their roots to the northwest and tops to the southeast on the south side of the path. Another excellent indication of its tornadic character is shown in the damage at the Luce Furniture Co.'s factory and the building of the Columbian Storage Co.; both of these cases the walls were blown out by the exertion of the inside pressure, and the debris thrown into the street; several large plateglass windows along the path showed this same influence.

The total estimated damage of \$1,000,000 as given in the newspaper reports has been checked as far as possible and seems reasonably correct. The greatest damage was in the factory district, where the storm struck first, and to telephone, electric power, and street railway lines; about 70 per cent of the total damage occurred here. The loss to the individual property owner was relatively light, but the area affected was large. It is estimated that 1,500 shade trees were either thrown down completely or seriously damaged.

No loss of life occurred, and only two persons were slightly injured, both by falling debris. The fact that the storm occurred at night when factories were closed and few people were on the street accounts for no deaths and few injuries.

Only four well-defined tornadoes have been recorded in this city since the establishing of a Weather Bureau station here. The damage occasioned by that of May 2, 1930, is much greater than occurred in any of the previous storms.